

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Currently amended) An ultrasonic probe for obtaining ultrasound information of a region of interest (ROI), the probe comprising:

a housing having a central scan plane;

a transducer array pivotally mounted within the housing, the transducer array being pivotal around a rotation axis, the transducer array capable of sweeping through the central scan plane parallel to a longitudinal axis of the probe;

a drive shaft, said transducer array mounted to said drive shaft; and

a control member pivoting the transducer array about the rotation axis with respect to the central scan plane, the transducer array being configured to transmit and receive ultrasound signals to and from an oblique scan plane oriented at an angle with respect to the central scan plane,

wherein said control member comprises a stepper motor disposed in said housing,

wherein said drive shaft is coupled to said control member by a drive belt,

wherein said control member operates to rotate said drive belt.

2. (Canceled)

3. (Currently amended) An ultrasonic probe for obtaining ultrasound information of a region of interest (ROI), the probe comprising:

a housing having a central scan plane;

a transducer array pivotally mounted within the housing, the transducer array being pivotal around a rotation axis,

wherein said transducer array is connected to a drive shaft;

a control member pivoting the transducer array about the rotation axis with respect to the central scan plane, the transducer array being configured to transmit and receive ultrasound signals to and from an oblique scan plane oriented at an angle with respect to the central scan plane[;];

wherein the control member comprises a stepper motor disposed in the housing;

and

comprising a gear **connected to said drive shaft;** and

a belt, wherein the belt couples the gear to the stepper motor,

wherein said stepper motor operates to rotate said drive shaft by moving said

belt.

4. (Currently amended) An ultrasonic probe for obtaining ultrasound information of a region of interest (ROI), the probe comprising:

a housing having a central scan plane;

a transducer array pivotally mounted within the housing, the transducer array being pivotal around a rotation axis; **and**

a control member pivoting the transducer array about the rotation axis with respect to the central scan plane, the transducer array being configured to transmit and receive ultrasound signals to and from an oblique scan plane oriented at an angle with respect to the central scan plane; **and**

wherein the control member comprises a handcrank, **said handcrank employed to pivot said transducer array.**

5. (Original) The ultrasonic probe of claim 1, further comprising a position sensing device for sensing an angular position of the transducer array with respect to a reference angle.

6. (Original) The ultrasonic probe of claim 1, further comprising an optical sensing device for sensing an angular position of the transducer array with respect to a reference angle.

7. (Original) The ultrasonic probe of claim 1, further comprising a centering device determining when the transducer array is aligned with the central scan plane.

8. (Original) The ultrasonic probe of claim 7, wherein the centering device is a magnetic sensing device.

9. (Original) The ultrasonic probe of claim 1, wherein the probe is configured to obtain 3D volumes of scan planes.

10. (Original) The ultrasonic probe of claim 1, further comprising a button directing the control member to rotate the transducer array a predetermined number of degrees each time the button is pressed.

11. (Original) The ultrasonic probe of claim 1, further comprising a button directing the control member to rotate the transducer array to a predetermined position relative to the central scan plane.

C 1 12. (Original) The ultrasonic probe of claim 1, wherein the probe is one of a rectal probe, an endovaginal probe, a small part probe producing a sector-shaped scan plane, and a small linear probe producing a rectangular-shaped scan plane.

13. (Currently amended) An ultrasonic probe for obtaining ultrasound information of a region of interest (ROI), the probe comprising:

a housing having a central scan plane;
a transducer array pivotally mounted within the housing, the transducer array being pivotal around a rotation axis, the transducer array capable of sweeping through a central scan plane parallel to a longitudinal axis of the probe; ~~and~~

a motor pivoting the transducer array about the rotation axis with respect to the central scan plane, the transducer array being configured to transmit and receive ultrasound signals to and from an oblique scan plane oriented at an angle with respect to the central scan plane;

a gear connected to said drive shaft, said drive shaft rotatable by moving said gear; and

a belt forming a loop connecting said motor to said gear, said motor rotating said drive shaft by moving said belt and said gear.

14. (Original) The ultrasonic probe of claim 13, wherein the probe is one of a rectal probe, an endovaginal probe, a small part probe producing a sector-shaped scan plane, and a small linear probe producing a rectangular-shaped scan plane.

15. (Original) The ultrasonic probe of claim 13, wherein the motor is a stepper motor disposed in the housing.

16. (Currently amended) An ultrasonic probe for obtaining ultrasound information of a region of interest (ROI), the probe comprising:

- a housing having a central scan plane;
- a transducer array pivotally mounted on a drive shaft within the housing, the transducer array being pivotal around a rotation axis; ~~and~~
- a motor pivoting the transducer array about the rotation axis with respect to the central scan plane, the transducer array being configured to transmit and receive ultrasound signals to and from an oblique scan plane oriented at an angle with respect to the central scan plane[[]];
- wherein the motor is a stepper motor disposed in the housing; ~~and~~
- ~~comprising~~ a gear[[],] attached to the drive shaft of the transducer array[[],]; and
- a belt, ~~wherein the belt~~ coupl[[]]ing the gear to the stepper motor,
- wherein said transducer array is pivoted around said rotation axis by said motor rotating said belt, said belt thereby rotating said gear.

17. (Original) The ultrasonic probe of claim 13, further comprising a position sensing device for sensing an angular position of the transducer array with respect to a reference angle.

18. (Original) The ultrasonic probe of claim 13, further comprising an optical sensing device for sensing an angular position of the transducer array with respect to a reference angle.

19. (Original) The ultrasonic probe of claim 13, further comprising a centering device for determining when the transducer array is aligned with the central scan plane.

20. (Original) The ultrasonic probe of claim 19, wherein the centering device is magnetic sensor device.

21. (Currently amended) A method for obtaining 2D images of a region of interest (ROI), the method comprising the steps of:

C1
providing a housing having a central scan plane;
mounting a transducer array pivotally within the housing, the transducer array being pivotal around a rotation axis, the transducer array capable of sweeping through a central scan plane parallel to a longitudinal axis of the housing; **and**
pivoting the transducer array around the rotation axis with respect to the central scan plane **by rotating a belt connected to said drive shaft**, the transducer array being configured to transmit and receive ultrasound signals to and from an oblique scan plane oriented at an angle with respect to the central scan plane; **and**

providing a stepper motor disposed in said housing, said stepper motor rotating said belt.

22. (Canceled)

23. (Currently amended) A method for obtaining 2D images of a region of interest (ROI), the method comprising the steps of:

providing a housing having a central scan plane;

mounting a transducer array for pivotal motion around a rotation axis,

wherein said transducer array is mounted on a drive shaft; and

pivoting the transducer array around the rotation axis with respect to the central scan plane, the transducer array being configured to transmit and receive ultrasound signals to and from an oblique scan plane oriented at an angle with respect to the central scan plane;

~~comprising the step of~~ providing a stepper motor disposed in the housing; and

~~comprising the step of~~ providing a gear and a belt, wherein the belt couples the gear to the stepper motor,

wherein said gear is connected to said drive shaft, said drive shaft rotated by said stepper motor rotating said belt, said belt thereby rotating said gear.

24. (Currently amended) A method for obtaining 2D images of a region of interest (ROI), the method comprising the steps of:

- providing a housing having a central scan plane;
- mounting a transducer array for pivotal motion around a rotation axis; and
- pivoting the transducer array around the rotation axis with respect to the central scan plane, the transducer array being configured to transmit and receive ultrasound signals to and from an oblique scan plane oriented at an angle with respect to the central scan plane; and

~~further comprising the step of providing a handcrank, said handcrank employed to pivot said transducer array.~~

25. (Original) The method of claim 21, further comprising the step of providing a position sensing device for sensing an angular position of the transducer array with respect to a reference angle.

C 26. (Original) The method of claim 21, further comprising the step of providing an optical sensing device for sensing an angular position of the transducer array with respect to a reference angle.

27. (Original) The method of claim 21, further comprising the step of providing a centering device determining when the transducer array is aligned with the central scan plane.

28. (Previously presented) The method of claim 27, wherein the step of providing a centering device comprises providing a magnetic sensing device determining when the transducer array is aligned with the central scan plan.

29. (Previously presented) The method of claim 21, further comprising the step of configuring the transducer array to obtain 3D volumes of scan planes.

30. (Original) The method of claim 21, further comprising the step of providing a button for rotating the transducer array a predetermined number of degrees each time the button is pressed.

C1 31. (Original) The method of claim 21 and comprising the step of providing a button for rotating the transducer array to a predetermined position relative to the central plane.

32. (Previously presented) The method of claim 21 wherein the transducer array is located in at least one of a rectal probe, an endovaginal probe, a small

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part probe producing a sector-shaped scan plane, and a small linear probe producing a rectangular-shaped scan plane.

